LISTING OF CLAIMS

1. (Currently amended) A method ~~of fabricating~~ employing an anti-reflective layer during fabrication of a dual damascene metallization layer ~~device in a chemical vapor deposition chamber~~, the method comprising the steps of:

forming a first layer of dielectric that is to be patterned;

forming an anti-reflective layer over the first layer using an oxygen source comprising at least one of a carbon oxide, methanol, and water, wherein the anti-reflective layer is substantially nitrogen-free and comprises between about 20% and 80% oxygen; and

depositing a photoresist that contacts the anti-reflective layer.

2. (Currently amended) The method of claim 1 wherein forming an anti-reflective layer comprises introducing gas or liquid sources of carbon, hydrogen, silicon, and the oxygen source.

3. (Currently amended) The method of claim 2 wherein the oxygen source comprises ~~elemental oxygen,~~ carbon monoxide, or carbon dioxide.

4. (Currently amended) The method of claim 2 wherein forming ~~an~~ the anti-reflective layer comprises introducing silane at a flow rate of from 0.01sccm to 0.5 sccm per square centimeter of the surface of the anti-reflective layer.

5. (Currently amended) The method of claim 2, wherein forming ~~an~~ the anti-reflective layer further comprises applying radio frequency power in the chemical vapor deposition chamber at a power intensity of from 0.05 W to 5.5 W per square centimeter of the surface of the anti-reflective layer.

6. (Currently amended) A method of forming a metallization layer in ~~for improving~~ a damascene process ~~for metallization~~, said method comprising:

forming a low-k dielectric layer on a semiconductor substrate;

forming an anti-reflective layer <u>using an oxygen source comprising at least one of a carbon oxide, methanol, and water</u> on said low-k dielectric layer, wherein said anti-reflective layer comprises substantially no nitrogen and comprises between about 20% and 80% oxygen;

patterning said low-k dielectric layer, thereby forming interconnect line regions in said low-k dielectric layer; and

forming a conductive layer in said interconnect line regions.

7. (Original) The method of claim 6, wherein the forming of the anti-reflective layer is performed in a high density plasma chemical vapor deposition reactor.

8. (Original) The method of claim 6, wherein the extinction coefficient for the anti-reflective layer is between about 0 and 1.3 at 248 nm.

9. (Canceled)

10. (New) The method of claim 6, wherein forming an anti-reflective layer further comprises using a silicon precursor selected from the group consisting of a silane, an organosilicate, and an organosilane.

11. (New) The method of claim 10, wherein the silicon precursor comprises a compound in which some organic substituents are bonded to silicon through an oxygen linkage and others are attached directly to silicon.

12. (New) The method of claim 10, wherein forming the anti-reflective layer comprises supplying the oxygen source and a source of the silicon precursor in a ratio of between about 5:1 to about 100:1.

13. (New) The method of claim 12, wherein forming the anti-reflective layer comprises supplying the oxygen source and a source of the silicon precursor in a ratio of between about 25:1 to about 75:1.

14. (New) The method of claim 12, wherein the oxygen source is carbon dioxide and the source of the silicon precursor is silane.

15. (New) The method of claim 1, wherein forming an anti-reflective layer further comprises using a silicon precursor selected from the group consisting of a silane, an organosilicate, and an organosilane.

16. (New) The method of claim 15, wherein the silicon precursor comprises a compound in which some organic substituents are bonded to silicon through an oxygen linkage and others are attached directly to silicon.

17. (New) The method of claim 15, wherein forming the anti-reflective layer comprises supplying the oxygen source and a source of the silicon precursor in a ratio of between about 5:1 to about 100:1.

18. (New) The method of claim 17, wherein forming the anti-reflective layer comprises supplying the oxygen source and a source of the silicon precursor in a ratio of between about 25:1 to about 75:1.

19. (New) The method of claim 17, wherein the oxygen source is carbon dioxide and the source of the silicon precursor is silane.

20. (New) A method employing an anti-reflective layer during fabrication of an integrated circuit, the method comprising:

forming a first layer that is to be patterned;

forming an anti-reflective layer over the first layer using a source of a carbon oxide and a source of silicon provided in a ratio of between about 5:1 and 100:1, wherein the anti-reflective layer is substantially nitrogen-free; and

depositing a photoresist that contacts the anti-reflective layer.

21. (New) The method of claim 20, wherein the source of a carbon oxide comprises at least one of a carbon oxide, and methanol.

22. (New) The method of claim 20, wherein the anti-reflective layer comprises between about 20% and 80% oxygen.